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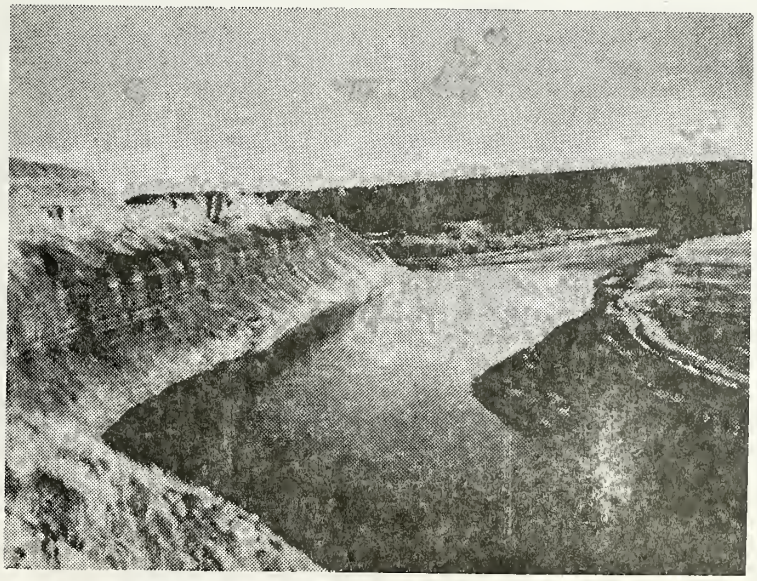
MONTANA DEPARTMENT OF FISH, WILDLIFE & PARKS

THE MISSOURI RIVER
MORONY DAM TO FT. BENTON
A FISH AND WILDLIFE ASSESSMENT

INTRODUCTION

The Missouri River has played a key role in the development of Montana. Today with its balance of water development projects and preserved areas, the river continues to contribute to the economic viability of the state as well as offering Montana people the amenity values so important to the Montana way of life.

The great falls of the Missouri have always been a barrier and as such marked the change between the headwaters aquatic ecosystems and the downstream systems. The classification of the river from Fort Benton downstream as wild and scenic was based, to a large degree, on the historical and recreational aspects of the river. Fish and wildlife investigations conducted subsequent to that classification have shown that the fish and wildlife populations now inhabiting the area are, to a substantial degree, dependent on the natural boundaries with the original falls area marking the upper limit of their habitat needs.



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The Missouri River east of Great Falls between Morony Dam and Fort Benton contains several potential sites for hydroelectric dams. Considerable interest has recently been expressed by the Bureau of Reclamation and the Montana Power Company to develop one of the dam sites in that area.

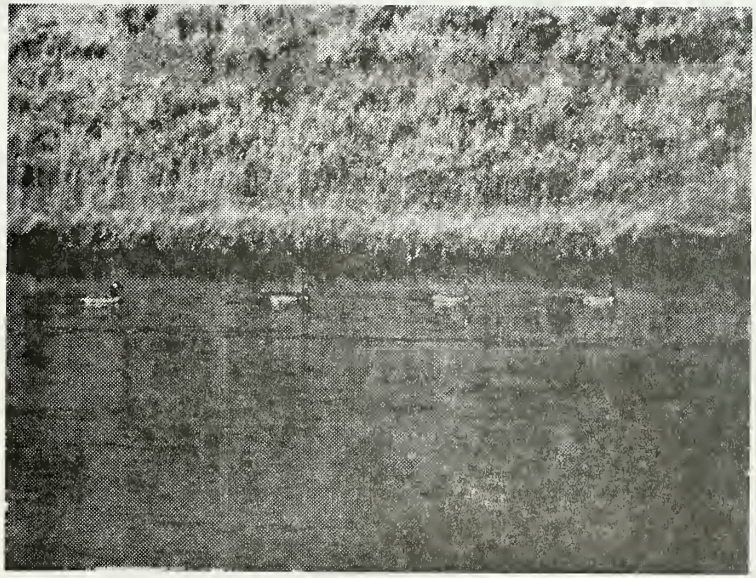
Bureau of Reclamation is studying the feasibility of 17 different dam options involving at least 9 sites. Options range from a high dam at Fort Benton with an afterbay in the Wild and Scenic portion to small, pump-back storage projects on the tributaries. The Montana Power Company is principally interested in the Carter Ferry site.

The probability of the Bureau of Reclamation constructing a dam is small. The most likely hydropower development is an MPC dam at Carter. In comparing the various dam proposals, it is tempting to conclude that the MPC site at Carter is more favorable from an environmental standpoint. However, serious impacts still result from the Carter proposal. Potential impacts of this development to the fish and wildlife resources of the area are discussed below.

POTENTIAL WILDLIFE IMPACTS OF PROPOSED CARTER FERRY DAM PROJECT

The proposed dam at Carter Ferry by Montana Power Company would inundate 3,100 acres of Missouri River bottom and "breaks" habitat, impacting many species of Montana wildlife. Among these are mule deer, pheasants, sharptail grouse, Hungarian partridge, Canada geese, various species of waterfowl, furbearers, nongame birds and mammals, and raptors. The impacts on several of these species will be discussed in detail as follows:

Canada Geese: During a 5-year wildlife inventory of the Missouri River from Morony Dam to Fred Robinson Bridge, Canada goose nest and production surveys were conducted during the spring of 1976 through 1980. A total of 470 nests was located and observed during these surveys. Based on 1979 and 1980 surveys, a minimum of 175 nests was found from Morony Dam to Robinson Bridge, a distance of 175 river miles. In 1979, an estimated 884 young geese were produced. This population has one of the highest reported nest success rates in North America at a 3-year average of 85.6%. By comparison, state and federal waterfowl management areas consider 70% nest success a sign of good management.

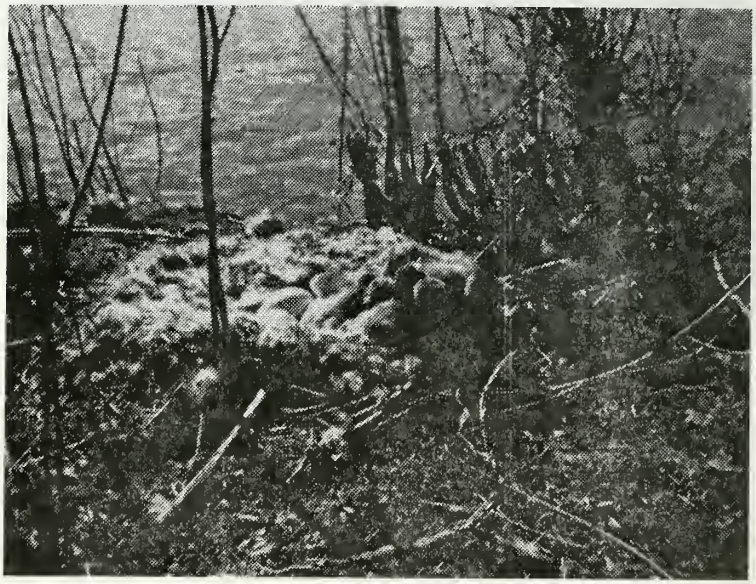


All 470 nests were located on river islands which provide the actual nesting habitat for this species. These river islands with their preferred open willow nest cover and good side channel flows provide the secure nesting habitat which accounts for the birds' great success. In 1979 and 1980, data show that 61% of all goose nesting activity occurred above the mouth of the Marias River in the upper 30% of the river.

The upper river has approximately four times the nesting density as downstream areas. For example, the Morony Dam to Carter section had 1.9 nests per river mile while the section from PN Ferry to Robinson Bridge had only 0.48 nests per mile.

The proposed Montana Power Company dam at Carter Ferry would inundate 23 Canada goose nest sites while impacts immediately downstream from increased velocities and habitat loss could result in an additional loss of 7-10 nest sites for a total of

19% of the Canada goose production on the Missouri River. This would be a loss of an average annual production of approximately 170 young geese or equivalent to the annual Canada goose production of the Freezout Lake Waterfowl Management Area in the early 1970's.



The Missouri River from Morony Dam to Robinson Bridge has an extremely viable, stable and one of the most successful Canada goose breeding populations in North America. The proposed impoundments would severely impact this valuable resource.

Mule Deer. The major big game animal in the area is the mule deer. This species makes extensive use of the Missouri River breaks and bottoms. The river breaks provide the critical winter range for mule deer in this area as surrounding uplands are under intensive agricultural production. The riparian bottoms and river islands also provided secure fawning cover in early summer. Based on state Wildlife Division winter surveys,

this population has been rapidly expanding from a population low in the early 1970's. In 1976 aerial winter surveys found 467 mule deer in the Missouri River breaks from Morony Dam to Fort Benton, approximately 30 river miles. During winter 1980, 940 mule deer were found in this same area for a 100% increase in 4 years.

This increasing population trend continues today. With projected increases in hunting demands and the close vicinity to a major human population center, this population represents an important wildlife and recreational resource.

Expected losses due to impoundment could be quite high. The deer population adjacent to the immediate upstream dams -- Morony, Ryan, Cochran, etc. -- is essentially nonexistent with virtually no deer wintering in these areas. A 50% loss of the breaks habitat could result in even greater losses in deer numbers.

Beaver: Beaver caches counts were conducted as part of the overall wildlife inventory of the Missouri River. These counts provided an index to the distribution and density of beaver along the river. Based on 1979 observations, the beaver population from Morony Dam to the mouth of the Judith River would experience a 9% loss from impoundment at the Carter Ferry site. A significant beaver population also exists on Highwood Creek and it as well would face reduction from the proposed Carter Ferry Dam.

Again, these figures indicate only those direct losses from impoundment and do not cover downstream impacts due to potential changes in flow regime and resulting habitat alterations.

Upland game bird populations will also be impacted by the proposed Carter Dam. Pheasants, sharptails and Hungarian partridge populations utilizing the breaks and river bottom habitat types will face major reductions due to habitat loss.

Raptors utilizing this river section include the bald eagle. Ten of these birds wintered along the river from Morony Dam to Fort Benton in 1980. The riparian bottom at the mouth of Highwood Creek provided a roosting area for several of these birds. Several prairie falcons were also observed wintering along this section.

Breeding and wintering activity by peregrine falcons appear quite likely in the area as well.

POTENTIAL FISHERIES IMPACTS OF THE PROPOSED CARTER FERRY DAM PROJECT

The proposed Carter Ferry Dam would inundate approximately 15 miles of Missouri River and the lower portions of Highwood and Belt creeks. The fishery impacts of this development, however, would extend far beyond the project boundaries. The Department of Fish, Wildlife and Parks has conducted in-depth fishery research studies on the Missouri in this area since October 1975. These studies indicate that the river above Carter Ferry is vital for maintaining the integrity of fish populations downstream as far as Fort Peck Reservoir.

In large, warm water river systems, extensive upstream fish migrations are often noted during the spawning season and are associated with a movement to suitable spawning grounds. In the Missouri, several fish species make such runs into areas above Fort Benton and Carter Ferry from the Wild and Scenic reach and as far downstream as Fort Peck Reservoir.

Sauger, in particular, are dependent on the river upstream from Carter Ferry for reproduction and recruitment. Large concentrations of sauger move into this area during the spring, summer and early fall to spawn and feed. In Department of Fish, Wildlife and Park surveys, an average of 20.1 sauger per electrofishing hour*were sampled in the Missouri River above Carter Ferry compared to an average of 3.8 sauger per electrofishing

*An electrofishing hour is a standard scientific unit of measurement in fish population surveys.

hour downstream from Carter Ferry. Tag return evidence indicates that sauger utilizing the Missouri upstream from Carter Ferry for spawning and feeding come from as far downstream as the headwaters of Fort Peck Reservoir, a distance of more than 190 miles.

In addition to sauger, several other important fish species utilize the Missouri River upstream from Carter Ferry for spawning. Key species include walleye, shovelnose sturgeon, channel catfish, smallmouth and bigmouth buffalo, blue sucker and brown trout. The three most important commercial fish species harvested in the reservoir -- goldeye, bigmouth buffalo and smallmouth buffalo -- also spawn in the Missouri River upstream from the proposed Carter Ferry Dam.

Tag return evidence indicates movements of these fish often exceed 200 miles. Thus, both sport and commercial fisheries could be impacted by destruction of traditional spawning grounds.

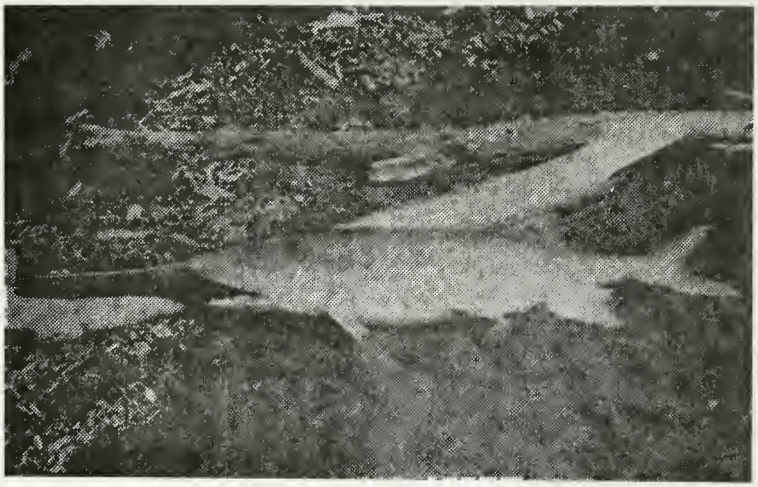
Electrofishing and tag return evidence indicates sauger and several other key fish species move back downstream into the reach of Missouri River below Carter Ferry after their spawning and feeding periods. A dam on the Missouri River at Carter Ferry blocking the fish migrations which have been identified would have obvious implications far beyond the project boundaries.

Creel survey statistics collected by the Department of Fish, Wildlife and Parks during the spring and summer of 1977 and 1978 indicate the Missouri River in the Carter Ferry area provides a substantial sauger fishery as well as an important fishery for walleye, northern pike and burbot. Fisherman success (catch) rates for these species in the Carter Ferry area are higher than average success rates reported elsewhere in the United States.

This river fishery would essentially be eliminated in the flooded area. Additionally, it would be difficult to establish a substantial self-sustaining fishery in a reservoir with a rapid flow through rate and sparse littoral zone.

A major concern of the proposed dam is its possible effect on the paddlefish migration which occurs in the Missouri River immediately downstream. The paddlefish is listed officially as a "Species of Special Concern - Class A" in Montana, and is considered "threatened" nationally.

At one time, paddlefish were common throughout much of the Mississippi/Missouri River system. However, during the last 100 years, paddlefish numbers have declined considerably. Only six major self-sustaining paddlefish populations remain in the United States today, including the Missouri River/Fort Peck Reservoir population.

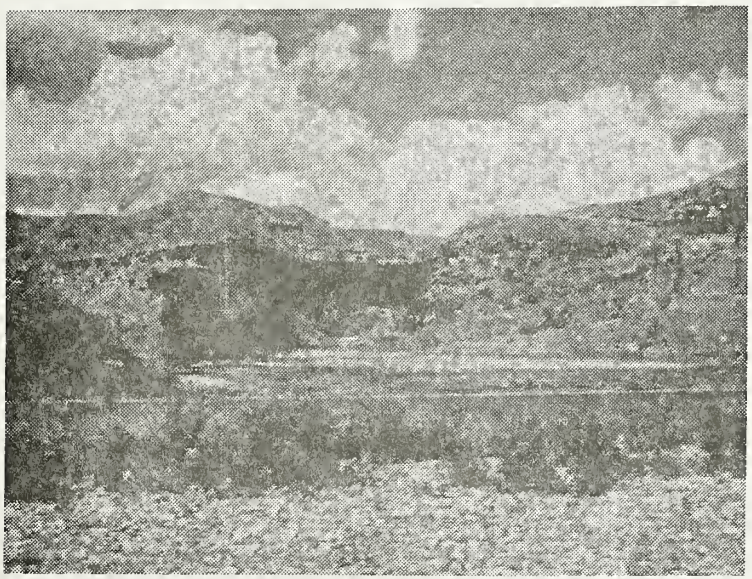


Paddlefish require water temperatures of at least 50 degrees F and moderately high turbidity during the spring runoff period and suitable substrate for successful spawning. Any change in channel configuration, water temperature, turbidity, and gas saturation as a result of new impoundment of the Missouri would be of considerable concern.

OTHER POTENTIAL IMPACTS

In addition to fish and wildlife values, the Missouri River upstream from Carter Ferry supports significant scenic and historic values which would be inundated by the proposed dam. The reach of the Missouri River immediately below Morony Dam, from the dam to several miles below Belt Creek, contains the last remaining whitewater portion of the Missouri River in existence. The whitewater segment has been utilized to some extent by whitewater enthusiasts for several years and recently an outfitter from Great Falls has begun commercial guided trips through the whitewater.

Also along the Missouri River upstream from Carter Ferry, several significant historic sites are found. North of the river and across from Belt Creek are the Sulphur Springs, significant in the Lewis and Clark Expedition. The Sulphur Springs were believed critical in restoring the health of Indian guide, Sacajawea, when she became critically ill. On the southern shore and downstream from Belt Creek is the site of the portage where the Lewis and Clark Expedition left the Missouri and portaged around the Great Falls of the Missouri. This site has since been donated to Council No. 315 of the Boy Scouts of America. Along the Missouri River downstream from the Sulphur Springs and portage area, several buffalo jump sites (pishkins) are found.



CONCLUSION

The fish and wildlife studies recently completed on the Missouri River provide strong evidence linking the river between Fort Benton and Morony Dam to the welfare of the entire river above Fort Peck. There are also substantial resident wildlife populations dependent upon the river bottom and breaks habitat type. Normally this type of information does not come to light until dam feasibiity studies are well advanced, often at times when developers are reluctant to change direction and abandon extensive investments in planning and design. Available now, this knowledge should be used to view viable alternatives to meet our energy needs while preserving Montana's amenity values. Discussion of these alternatives should be held before the commitment to further damming on the Missouri becomes irreversible.